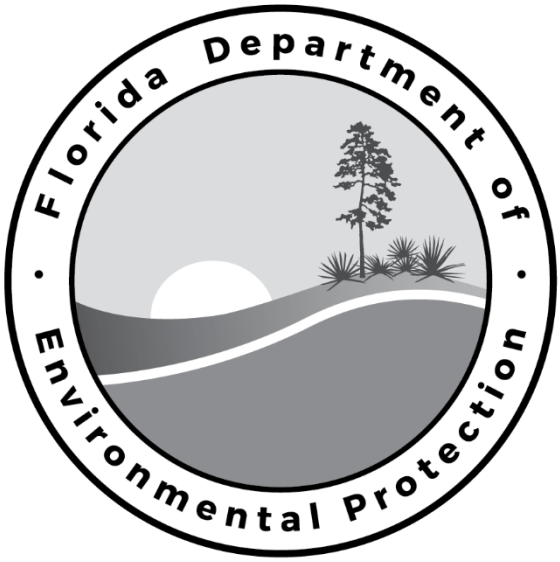


Biological Assessment of

Town of Century WWTF

Escambia County

NPDES # FL0032468

Sampled October 30, 2017 and November 2, 2017

May 2018

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

NELAC Certification No. E31780

CONTENTS

Facility Overview

Methods

Results

Conclusion

Literature Cited

Tables

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

Table 2. Effluent limits, Class III Freshwater Criteria, and analytical water chemistry and microbiological data

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

Table 4 Measured and predicted freshwater algal growth potential (AGP)

Table 5. Macroinvertebrate dipnet samples – qualitative

Appendices

Appendix A. Map of facility

Appendix B. Facility Summary

Appendix C. Explanation of measurements

Appendix D. Chain of Custody

Appendix E. Physical/Chemical and Habitat Assessment field sheets

Appendix F. Chemical analyses of effluent and receiving water

EPA End Sheet

Facility Overview

The Town of Century Wastewater Treatment Facility is a Municipal Domestic Wastewater Treatment Facility. A Facility Summary, including a description of the facility, summary of permit limits, and any relevant Administrative Order (AO), Consent Order (CO), and Discharge Monitoring Report (DMR) information is provided in Appendix B. The effluent is continuously discharged into Escambia River, a Class III Fresh Water (see map Appendix A).

The Escambia River falls within the Panhandle West Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC thresholds, expressed as annual geometric means, are 0.06 mg/L total phosphorus and 0.67 mg/L total nitrogen. This FYI event can only provide single sample results, therefore, compliance should be determined with additional sampling events. http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

Methods

Effluent composite and grab samples were collected from monitoring location EFF-01, after dechlorination. Toxicity tests were not requested for this inspection, the facility's current permit does not include toxicity sampling as a requirement. On the same day, water samples were collected above and below the point of discharge in the Escambia River. On 11/2/2017, biological samples were collected from a Control Site (located in the Escambia River beginning 120m upstream of the point of discharge and ending 220m upstream of the point of discharge) and a Test Site (located in the Escambia River beginning 190m downstream of the point of discharge and ending 90 m downstream of the point of discharge).

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops and https://floridadep.gov/dear/quality-assurance/content/dep-sops for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

All references to 62-302.530, F.A.C. are to the surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667.

The following were involved in this investigation: Nathan Mulkey (DEP Northwest Regional Operation Center, Pensacola) and Dana Vestal (DEP Northwest District), and DEP Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Andrew Tintle, and Adrienne Pennington).

Results

Physical and Chemical Parameters (See Table 1 and Appendices D, E, and F)

- The effluent flow measured during this survey was 0.439 MGD (Northwest District sampling staff).
- The pH, specific conductance, and dissolved oxygen of the effluent, Test Site, and Control Site complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limits.
- The sampler's field sheets noted that on 11/2/2017, the water at the Control and Test Sites in the Escambia River was the color of brown clay, turbid, and opaque at both sites. Sediment oils, an odor of treated sewage, and oil slicks were observed at the Test Site.
- Habitat Assessment scores were similar at the Control Site (111) and Test Site (113), which places both sites in the Suboptimal category. Substrate diversity consisted of roots and woody debris, with the additional presence of some gravel at the Control site. Substrate availability was less than 5%, scoring both sites in the poor range. At both sites, greater than 25% habitats were affected by smothering and banks met only 1 to 2 of the 3 stability measures.

Analytical Water Chemistry (See Table 2 and Appendix F)

- Effluent nutrient levels complied with permit limits.
- Effluent total phosphorus, ortho-phosphate, and nitrate-nitrite values were elevated compared to the Control and Test Site sample values. Despite effluent nutrient values being much higher than ambient values, the nutrient values in the Control and Test Sites samples were similar to each other. Therefore, there was no detectable nutrient enrichment from the effluent at the Test Site in this sampling event.
- Ortho-phosphate and total organic carbon were detected in the field blank between the method detection limit (MDL) and practical quantitation limit (PQL).

- The amount of effluent total residual chlorine (TRC) measured for disinfection and after dechlorination complied with the effluent permit limits.
- Total suspended solids (TSS) and carbonaceous biochemical oxygen demand (CBOD) of the effluent complied with permit limits. Chlorophyll *a* (corrected) was undetected in the effluent sample and was detected at a low level at both the Control and Test Sites.

Microbiology (See Table 2 and Appendix F)

- Fecal coliform and *Escherichia coli* (*E. coli*) analyses were performed by the University of West Florida, Pensacola, Florida.
- Fecal coliforms were detected in the effluent, Control Site, and Test Site samples at levels which complied with Class III Freshwater Quality Criterion (62-302.530(6(a)), F.A.C.) and facility permit limits.
- *E. coli* was not detected in the effluent. *E. coli* was detected in the Control and Test Sites at levels that complied with Class III Freshwater Quality Criterion (62-302.530(6(b)), F.A.C.).

Metals (See Table 3 and Appendix F)

- Copper in the effluent grab sample exceeded Class III Freshwater Quality Criteria (62-302.530(23), F.A.C.). All other metals in the effluent complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Iron and lead in the Control Site and Test Site samples exceeded Class III Freshwater Quality Criteria (62-302.530(38 and 39), F.A.C.).
- Copper and lead were detected in the field blank between the method detection limit (MDL) and practical quantitation limit (PQL). The field blank was collected with the effluent samples.

Algal Growth Potential (See Table 4 and Appendix F)

- The freshwater species, *Pseudokirchneriella subcapitata*, was used for the AGP tests. The analytical chemistry suggests that the effluent was nitrogen-limited and the Control Site and Test Site were nitrogen-phosphorus co-limited. The AGP values for the Control and the Test Site samples were similar, and lower than the effluent.

Flora (See Appendix E)

- Two temporally independent Linear Vegetation Survey (LVS) samplings showing a Coefficient of Conservatism score ≥ 2.5 and the frequency of occurrence of Florida Exotic Plant Pest Council (FLEPPC) exotic taxa ≤ 25% are needed to achieve NNC floral metrics. Sites with no observed macrophytes are considered to achieve the LVS component of the NNC. Two temporally independent Rapid Periphyton survey (RPS) samplings with ≤ 25% rank 4-6 (algae >6mm thick) coverage are needed to achieve NNC floral metrics. This FYI event can only provide single sample results; therefore, Numeric Nutrient Criteria (NNC) compliance should be determined with additional sampling events.
- For the LVS, both Control and Test Sites lacked aquatic macrophytes.
- The RPS was performed at the Test and Control Sites. The canopy cover was 0% at both the Control and Test Sites (the 96 written on the RPS field sheets was an error; samplers incorrectly recorded the number of quadrants without cover). Thick algal growth is not expected at heavily shaded sites. At both sites, 0% of the sampled points had algal length measurements greater than 6mm.

Macroinvertebrates (See Tables 5)

- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate community at the Test Site was similar to the Control Site. The Test Site scored 48 A on the Stream Condition Index (SCI) and the Control Site scored 52 A, placing both in the Marginal Category (see Appendix C for an explanation of SCI Categories). These scores are indicative of a balanced faunal community. Both sites had similar numbers of Ephemeroptera, Trichoptera, sensitive, and clinger taxa. Few long-lived taxa were collected at either site. The percentage of suspension feeders was similar at both sites. The Test Site had a higher percentage of Tanytarsini individuals (which tend to decline with human disturbance). The Test Site had a higher percentage of oligochaete worms. The percentage of very tolerant individuals was low and identical at each site (see Appendix C for an explanation of how these SCI metrics typically respond to human disturbance).
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

Conclusion

Copper in the effluent grab sample exceeded Class III Freshwater Quality Criteria (62-302.530(23), F.A.C.). Iron and lead in the Control Site and Test Site samples exceeded Class III Freshwater Quality Criteria (62-302.530(38 and 39), F.A.C., respectively). Copper and lead were detected in the field blank. Although nutrient and AGP values in the effluent samples were much higher than in the receiving water samples, the nutrient values, AGP values, and measured floral metrics at the Test Site compared to the Control Site did not indicate nutrient enrichment in the Escambia River from the effluent. There was no indication that the effluent was negatively affecting the aquatic macroinvertebrate community in the receiving water.

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USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

Town of Century WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite	Effluent Grab	Test Site	Control Site
Habitat Assessment	-	-	-	-	-	113	111
Sample Depth	m	-	-	-	-	0.3	0.3
Temperature	C	-	-	-	-	15.0	15.1
pH	SU	6.0-8.5	6.0-8.5	6.3	6.2	6.1	6.8
Specific Conductance	umhos/cm	≤ 1,275	-	-	-	68	69
Dissolved Oxygen	% saturation	≥ 67	-	-	105.3 c	86.4 c	86.5 c
Dissolved Oxygen	mg/L	-	≥ 6.0 s	6.6	9.1	8.7	8.7
Flow	MGD	-	0.675[1]	-	0.439[2]	-	-
Total Residual Chlorine	mg/L	-	≤ 0.01	0.01	0.01	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c- value is calculated
s- single sample
1- Annual average daily flow
2-Single sample result obtained from facility monitoring data

Table 2. Effluent limits, Class III Freshwater Criteria, analytical water chemistry, and microbiological data

Town of Century WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite	Effluent Grab	Test Site	Control Site	Field Blank
Ortho-phosphate	mg P/L	-	-	-	2.5	0.012	0.013	0.004 I
Total Phosphorus	mg P/L	-	-	2.7	2.7	0.042	0.043	0.002 U
Total Ammonia	mg N/L	-	≤ 6.0 s	0.036	0.023	0.031	0.031	0.002 U
Un-ionized Ammonia		≤ 0.02 s	-	< 0.02 c	-	< 0.02 c	< 0.02 c	
Nitrate and Nitrite	mg N/L	-	-	13	13	0.15	0.15	0.004 U
Total Kjeldahl Nitrogen	mg N/L	-	-	0.89	0.88	0.40	0.39	0.080 U
Organic Nitrogen	mg N/L	-	-	0.85 c	0.86 c	0.37 c	0.36 c	0.04 c
Total Nitrogen	mg N/L	-	-	14 c	14 c	0.55 c	0.54 c	0.04 c
Total Organic Carbon	mg C/L	-		3.2	2.8	6.4	6.3	1.0 I
Chlorophyll *a* - Corrected	ug/L	-	-	-	0.55 U	1.0 I	1.1 I	-
Phaeophytin	ug/L	-	-	-	0.40 U	0.40 U	0.80 U	-
CBOD, 5 day, N - inhibited	mg/L	-	≤ 60 s	1.9 I	-	0.75 I	0.76 I	-
Total Residual Chlorine	mg/L	≤ 0.01	≤ 0.01	0.01	0.01	-	-	-
Total Suspended Solids	mg/L	-	≤ 60 s	4 I	-	20	21 A	-
Turbidity	NTU	≤ 29 t	-	-	1.2	23	24	0.10 U
Color (true)	PCU	-	-	-	7.1	37	39	2.5 U
Chloride	mg Cl/L	-	-	-	35	3.8 A	3.8	0.20 U
Fluoride	mg F/L	≤ 10.0	-	-	0.035 U	0.035 U	0.035 U	0.035 U
Sulfate	mg SO4/L	-	-	-	11	5.1 A	5.1	0.20 U
Microbiology								
Fecal Coliforms [3]	cfu/100 mL	≤ 400 s #	≤ 800 s	-	8 B	151 B	138 B	1 U
Escherichia coli [3]	MPN/100 mL	≤ 410 s	-	-	10 U	199	171	1 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
U - Material analyzed for but not detected; value reported is the method detection limit
3 - Fecal coliform and *Escherichia coli* analysis performed by University of West Florida, Pensacola, FL
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

Town of Century WWTF	Units	Class III Criteria	Effluent Permit limits	Effluent Grab	Test Site Class III Criteria	Test Site	Control Site Class III Criteria	Control Site	Field Blank
Hardness	mg/L	-	Report	49.5 c	-	22.3 c	-	23.6 c	0.4 c
Aluminum	ug/L	-	-	36	-	986	-	927	3.0 U
Arsenic	ug/L	≤ 50	-	0.24	≤ 50	0.97	≤ 50	0.99	0.050 U
Cadmium	ug/L	≤ 0.161 b	-	0.043 I	≤ 0.097 b	0.020 U	≤ 0.097 b	0.020 U	0.020 U
Calcium	mg/L	-	-	17.2	-	7.25	-	7.69	0.075 U
Chromium, Total [4]	ug/L	≤ 48.4 b	-	0.40 U	≤ 27.7 b	2.2	≤ 27.7 b	2.1	0.40 U
Copper	ug/L	≤ 5.11 b	-	25.3 e	≤ 2.85 b	0.74 I	≤ 2.85 b	0.73 I	0.60 I
Iron	ug/L	≤ 1,000	-	60 I	≤ 1,000	2120 e	≤ 1,000	2150 e	30 U
Lead	ug/L	≤ 1.3 b	-	0.16 I	≤ 0.545 b	0.79 e	≤ 0.545 b	0.78 e	0.19 I
Magnesium	mg/L	-	-	1.59	-	1.03	-	1.07	0.040 U
Nickel	ug/L	≤ 28.8 b	-	2.14	≤ 16.1 b	1.18	≤ 16.1 b	1.15	0.20 U
Potassium	mg/L	-	-	7	-	1.1 I	-	1.2 I	0.30 U
Selenium	ug/L	≤ 5.0	-	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U	0.20 U
Silver	ug/L	≤ 0.07	-	0.010 U	≤ 0.07	0.010 U	≤ 0.07	0.010 U	0.010 U
Sodium	mg/L	-	-	25.9	-	4.1	-	4.3	0.50 U
Zinc	ug/L	≤ 66 b	-	50	≤ 37 b	5.0 U	≤ 37 b	5.0 U	5.0 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness
c - Value is calculated
e- Value exceeds the Class III Water Quality Criteria or permit limits
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
4 - Class III Freshwater Quality Criterion (62-302.530(19)(a),F.A.C.) for chromium-III

Table 4. Measured and predicted algal growth potential (AGP) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN), and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus.

Town of Century WWTF								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent	*Pseudokirchneriella subcapitata*	321	494.9 ± 99	1075 ± 215	527.4 ± 105.5	1161 ± 232.2	5.2	5.1
Test Site	*Pseudokirchneriella subcapitata*	8.84 A	6.9 ± 1.4	5.2 ± 1	20.9 ± 4.2	18.1 ± 3.6	15.1	13.1
Control Site	*Pseudokirchneriella subcapitata*	7.03	6.9 ± 1.4	5.6 ± 1.1	20.5 ± 4.1	18.5 ± 3.7	13.9	12.6

A - Value reported is the mean of two or more determinations

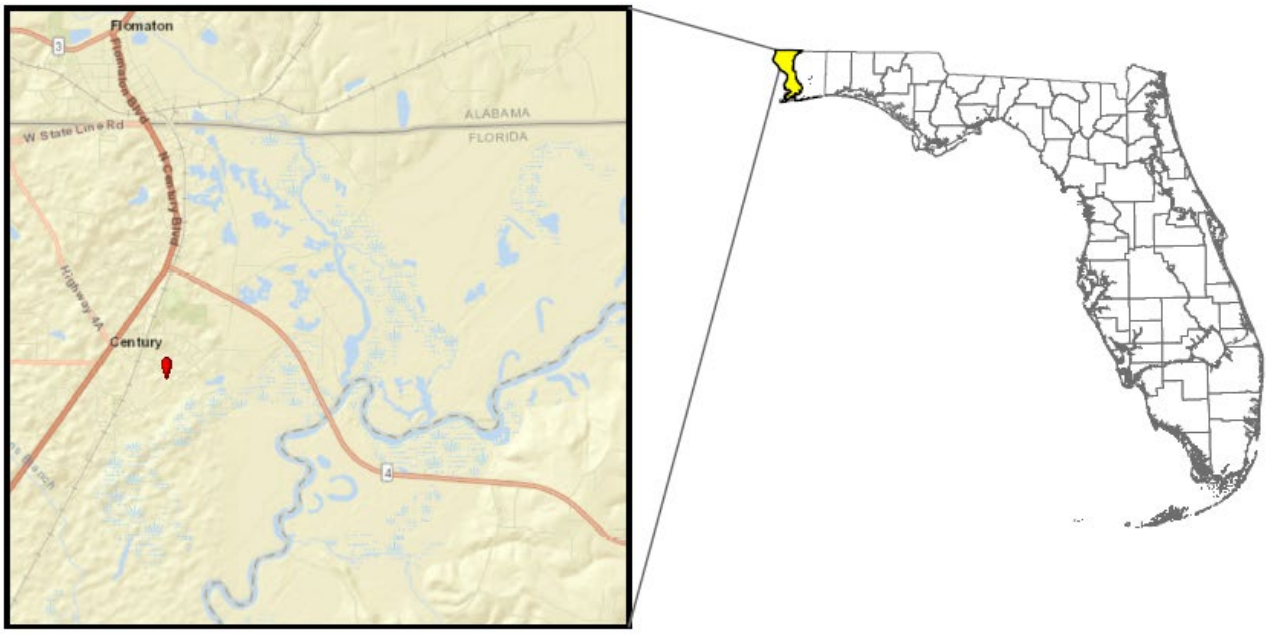
Table 5. Macroinvertebrate Dipnet Samples-Qualitative

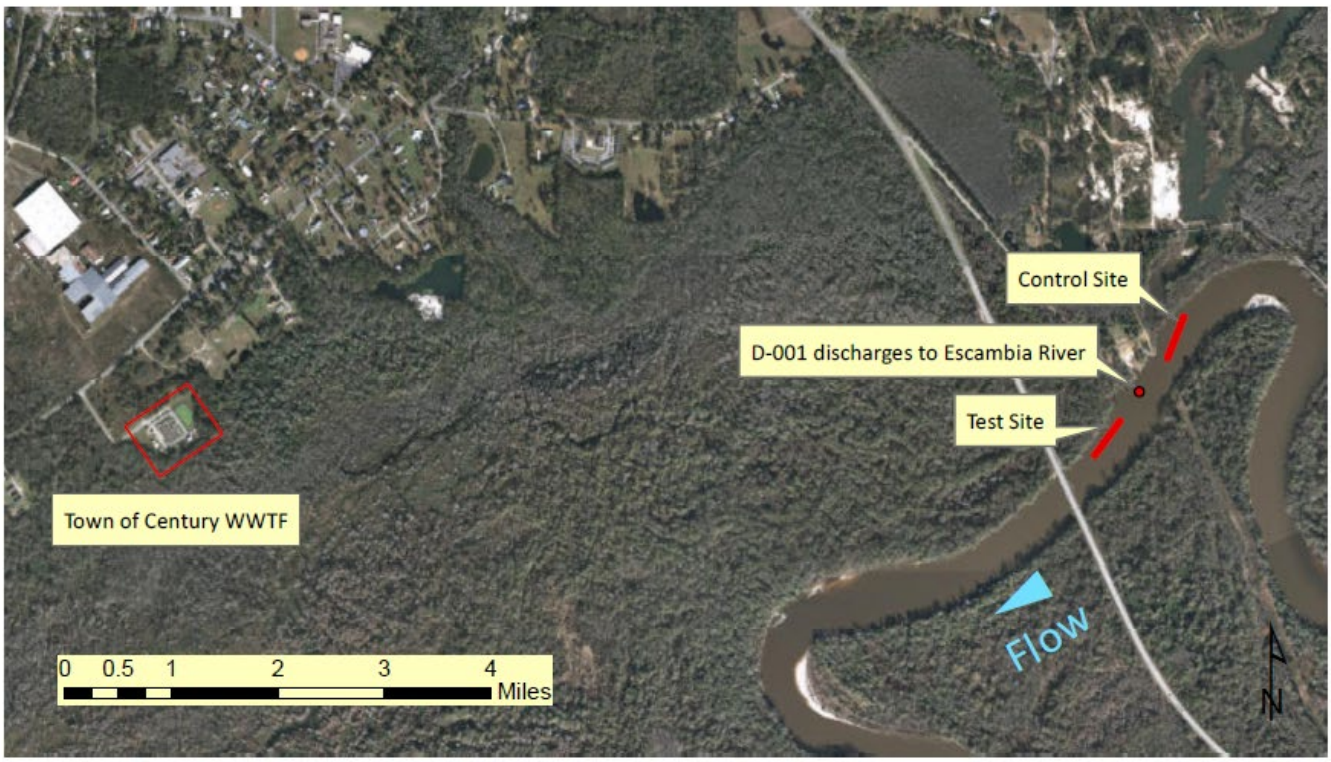
Town of Century WWTF FL0032468	Test Site		Control Site	
Stream Condition Index 2012	**52 A**		**48 A**	
Replicate	Rep 1	Rep 2	Rep 1	Rep 2
Stream Condition Index Metrics				
Number of Total Taxa	32	23	19	23
Number of Ephemeroptera Taxa	4	4	3	3
Number of Trichoptera Taxa	6	4	5	4
Number of Clinger Taxa	9	8	9	9
Number of Long-lived Taxa	1	0	2	1
Number of Sensitive Taxa	8	7	7	9
Percent of Dominant Taxon	56.2	56.3	63.3	62.3
Percent Suspension Feeders and Filterers	69.5	74.8	81.6	76.7
Percent of Tanytarsini Individuals	2.7	3.3	0.7	1.4
Percent of Very Tolerant Individuals	1.4	0.0	1.4	0.0
Total Number of Individuals	146	151	147	146
Community Composition: Percent of total				
Dominant Taxon Name	*Simulium* sp. (Diptera)	*Simulium* sp. (Diptera)	*Simulium* sp. (Diptera)	*Simulium* sp. (Diptera)
Amphipoda	0.7	0.7	0.0	2.1
Bivalvia	0.0	0.0	0.0	0.0
Coleoptera	2.1	2.0	0.0	4.8
Diptera	71.9	67.6	71.4	69.9
Ephemeroptera	4.1	5.3	4.8	3.4
Gastropoda	0.0	0.0	0.0	0.0
Odonata	1.4	0.7	2.0	1.4
Oligochaeta	4.1	5.3	0.0	0.0
Plecoptera	0.0	0.0	2.0	2.1
Trichoptera	15.1	18.5	19.7	16.4
Other	0.7	0.0	0.0	0.0
Functional Feeding Groups: Percent of total				
Browser-Grazers	0.0	0.0	0.0	0.0
Burrowing Deposit Feeders	4.1	5.3	0.0	0.0
Piercers	2.1	1.3	0.7	2.7
Predators	5.5	2.0	4.1	5.8
Scavengers	0.0	0.3	0.0	0.0
Scrapers	1.7	2.0	1.7	2.1
Shredders	4.5	4.0	2.4	2.7
Surface Deposit Feeders	12.0	10.3	9.5	9.9
Suspension Feeders	69.5	74.8	81.6	76.7
Unknown	0.7	0.0	0.0	0.0

A - Value reported is the mean of two determinations

Appendix A

Map of Facility





Appendix B

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event

Prepared By: Dana Vestal	**Contact Number:** (850) 595-0659
Facility Name (as it appears on permit): Town of Century WWTF	**Former Names:** None
NPDES Permit Number: FL0032468	**Permit Expiration Date:** November 26, 2018
Physical Address: 7360 Jefferson Street, Century, Florida 32535	
District: Northwest	**County:** Escambia
Function of Facility: Domestic wastewater treatment facility	
Facility Type: Domestic wastewater treatment facility	**Permitted Capacity (MGD):** 0.675 annual average daily flow (AADF)

Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.4403 MGD (annual average flow values for D-001 discharge August 2016 through July 2017).

If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): Not applicable

Description of type of Discharge:
☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent**
☐ **Other, please specify:**

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

Monitoring Site Number	Description of Monitoring Site
FLW-01	Parshall flume with ultrasonic flow sensing element
EFF-01	Sample point prior to discharge
EFA-1	Chlorine Contact Chamber 1
EFA-2	Chlorine Contact Chamber 2
EFA-3	Chlorine Contact Chamber 3
EFD-1	Post-dechlorination, prior to discharge to Escambia River

Description of Permitted Outfall(s): D-001 – The facility discharges through an open pipe with no diffuser, approximately 15 feet in length and at a depth of approximately 11 feet at normal river levels to the Escambia River, Class III fresh waters (WBID # 10C). The outfall pipe is exposed at low river levels. The point of discharge is located at approximate latitude/longitude 30°57'58" N, 87°14'4" W.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): The extended aeration wastewater treatment plant consists of two static screens, splitter box, two flow equalization tanks, three aeration basins, three secondary sedimentation basins, three chlorine contact chambers, three sulfur dioxide de-chlorination chambers, two tertiary filters, a 6-inch Parshall flume with an ultrasonic flow meter, four biosolids drying beds and a biosolids belt filter press. Flow from the WWTP is pumped through a pipe to an open-channel type rectangular stepped cascade aeration system prior to reentering a pipe to the outfall D-001.

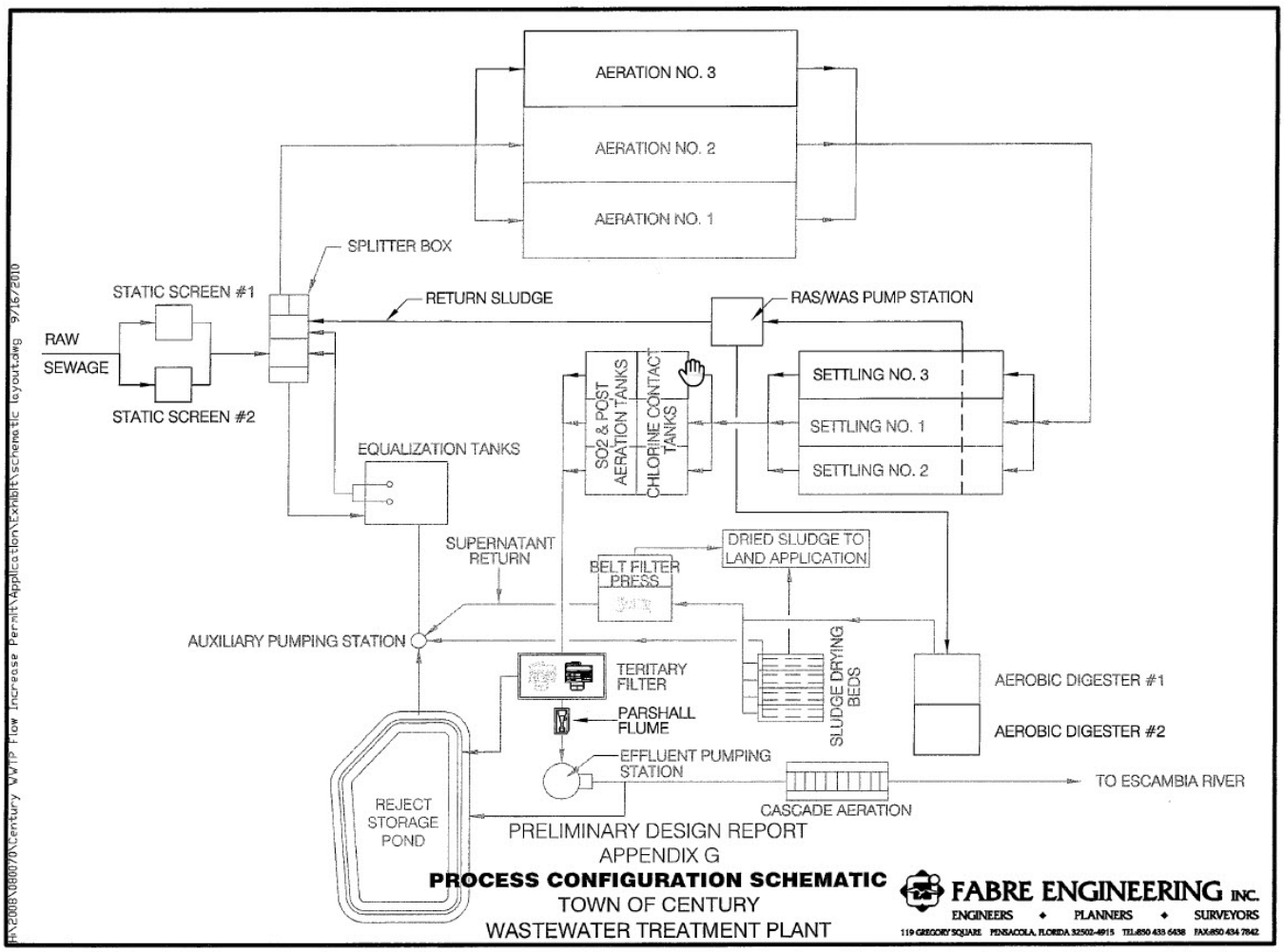


Figure 1 – Century WWTF Process Flow Diagram

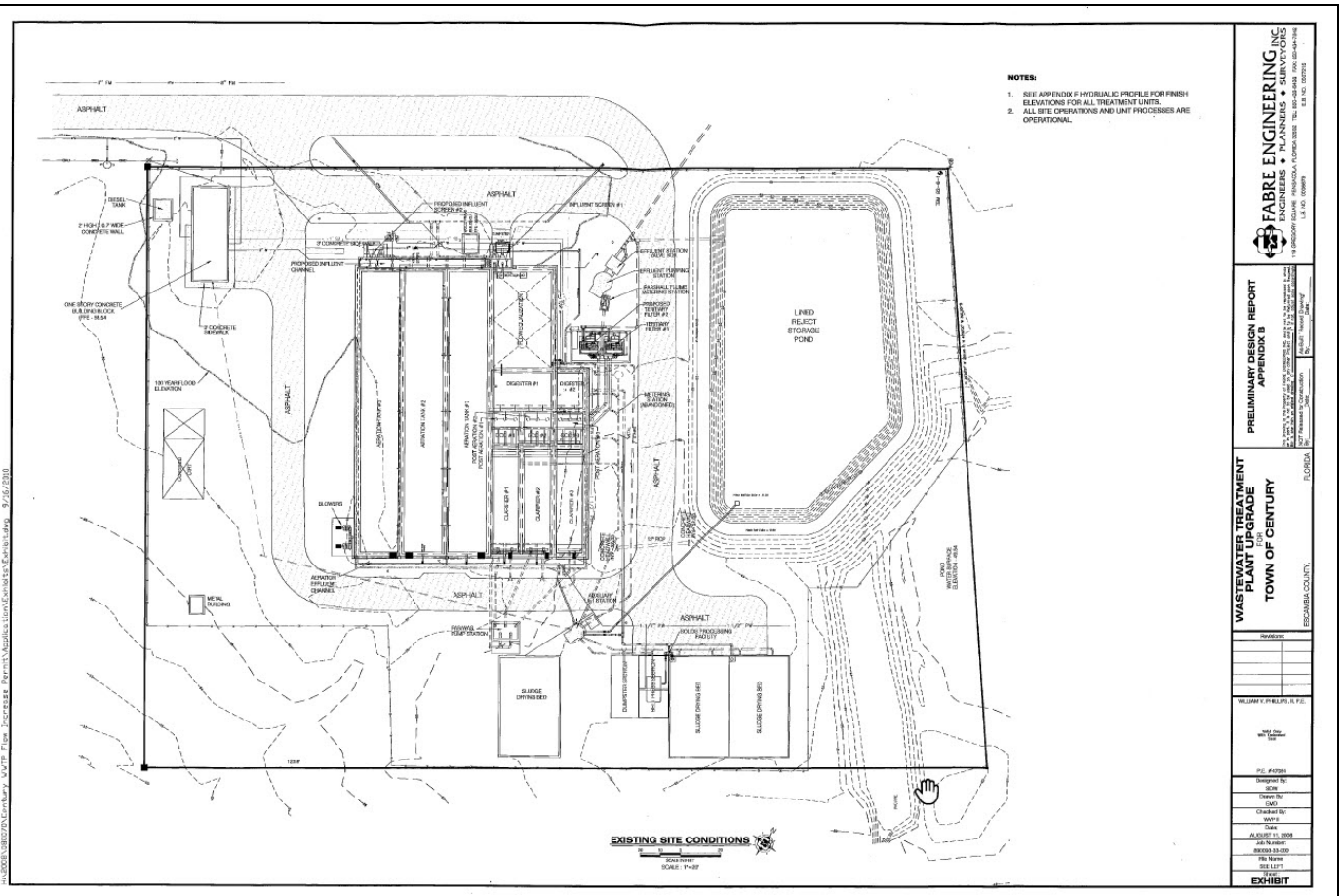


Figure 2 – Century WWTF Site Plan

PART I: Continued

List <u>current</u> Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow	MGD	Max Max	0.675 Report	Annual Average Monthly Average	5 Days/Week	Recording Flow Meter with Totalizer	FLW-01	See I.A.3
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	20 30 45 60	Annual Average Monthly Average Weekly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Solids, Total Suspended	mg/L	Max Max Max Max	20 30 45 60	Annual Average Monthly Average Weekly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max Max	Report Report	Monthly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max Max	Report Report	Monthly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Nitrogen, Total	mg/L	Max Max	Report Report	Monthly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Phosphorus, Total (as P)	mg/L	Max Max	Report Report	Monthly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Phosphate, Ortho (as P)	mg/L	Max Max	Report Report	Monthly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Nitrogen, Ammonia, Total (as N)	mg/L	Max Max Max Max	2.0 3.0 4.5 6.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	8-hr FPC	EFF-01	
Oxygen, Dissolved (DO)	mg/L	Min	6.0	Single Sample	5 Days/Week	Grab	EFF-01	
Chlorine, Total Residual (for Disinfection)	mg/L	Min	0.5	Single Sample	5 Days/Week	Grab	EFA-1	See I.A.5
Chlorine, Total Residual (for Disinfection)	mg/L	Min	0.5	Single Sample	5 Days/Week	Grab	EFA-2	See I.A 5

PART I: Continued

List <u>current</u> Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

			Effluent Limitations		Monitoring Requirements			
Parameter	Units	Max/ Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Chlorine, Total Residual (for Disinfection)	mg/L	Min	0.5	Single Sample	5 Days/Week	Grab	EFA-3	See I.A.5
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geo Mean Single Sample	Weekly	Grab	EFF-01	See I.A.4
pH	s.u.	Min Max	6.0 8.5	Single Sample Single Sample	5 Days/Week	Grab	EFF-01	
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Weekly	Grab	EFD-1	

Footnotes: I.A.3. - A recording flow meter with totalizer shall be utilized to measure flow and calibrated at least once every 12 months.
I.A.4. - The effluent limitation for the monthly geometric mean for fecal coliform is only applicable if 10 or more values are reported. If fewer than 10 values are reported, the monthly geometric mean shall be calculated and reported on the Discharge Monitoring Report.

I.A.5. - Total residual chlorine must be maintained for a minimum contact time of 15 minutes based on peak hourly flow.

PART I: Continued

Receiving Waters: Escambia River	**Classification (indicate whether fresh or marine):** Class III Fresh

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.): Not applicable

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.): Not applicable

Facility Mixing Zone Details (if applicable): Not applicable

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result
8/17/2016	Fecal coliform/#/100mL	800/100 mL single sample maximum	896/100 mL

Describe previous FYI and WQBEL study: Last FYI performed May 23-23, 2010 the conclusions section of the report noted effluent copper exceeded the criterion for copper for Class III fresh water (12.0 µg/L, limit ≤5.1 µg/L). The current permit required monthly monitoring for copper for twelve months and submittal of a report summarizing the results. The permit would be reopened if needed, based on the results.

Describe previous or current Enforcement Actions (including WLs): None

Describe any violations or problems noted in previous inspection: Last inspection completed on August 11, 2015 noted issues with operator site time on weekends; effluent exceedances for pH, total residual chlorine for disinfection and total residual chlorine for dichlorination; no written Operation & Maintenance Manual for the wastewater collection system.

Discuss whether DMR trends within previous five years are improving or declining: Improving in the last year.

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse): None

PART II: Sampling Event Information	
Date(s) sample collected: 10/30/2017	**Sampler(s):** Dana Vestal
Temperature (Deg C): Composites 2 °C	**pH (SU):** Composites 6.26, Grabs 6.15
Dissolved Oxygen (mg/L): Composites 6.56, Grabs 9.07	**Conductivity (umhos/cm):** Not available
Total Residual Chlorine (mg/L): Disinfection EFA-2 >2.2, EFA-3 1.95	**Total Residual Chlorine - after Disinfection (mg/L):** 0.01
Method of Chlorination: Gas chlorine 150 pound cylinders	**Method of De-chlorination:** Gas sulfur dioxide 150 pound cylinders
Flow During Sample Collection for each outfall(MGD): 0.439 MGD (daily flow value reported by facility for 10/30/2017)	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day): 0.440 MGD (November 2016 – October 2017 annual average flow values reported on DMRs)	
Describe Discharge during Sampling Event: ☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify:**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: Dioxane samples came back with chlorine indicated, samples were collected post dechlorination in the treatment process, therefore sodium sulfite was not added to the samples. For future sampling events sodium sulfite will be added regardless of where the samples are collected and assume trace amounts of chlorine are present.	

Appendix C

Explanation of Measurements

(1) Quality Assurance and Quality Control

DEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (DEP SOPs). Methods for all analyses are on file at the DEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/qa/index.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following DEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(62) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(62) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Habitat Assessment

Habitat assessment is used to evaluate the physical structure and extent of disturbance in a waterbody. Eight aspects are ranked, with 20 possible points for each aspect (QA Rule SOP FT 3100). The Habitat Assessment score includes types and amounts of benthic substrates, water velocity, amount of sand or silt accumulation, extent of artificial channelization, bank stability, and riparian zone width and vegetation type. All scores are summed to yield an overall Habitat Assessment score. Habitat Assessment score ranges from 11-160 and overall habitat quality is assigned to one of four categories: Optimal (120-160 points), Suboptimal (80-119 points), Marginal (40-79 points), and Poor (11-39 points).

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). High AGP values may constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a), F.A.C. and/or 62-302.530(48)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(62), F.A.C.

(7) Algal Phytoplankton and Periphyton Assemblages

Qualitative periphyton are sampled by taking subsamples of algae from natural substrates throughout the sample reach. Phytoplankton were sampled from the water column using a 1 L grab sample. Periphyton were subsampled and identified to the lowest practical level, usually species. Wet taxa and diatoms are identified separately. In the wet taxa analysis, soft algae are identified to the lowest practical level, and diatoms are identified only to order level (diatom). In the diatom analysis, diatoms are identified to the lowest practical level.

Chlorophyll *a* Content: Chlorophyll *a* content is an estimate of algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(b) F.A.C..

Algal Density: Algal density is estimated as number of natural units/ml for phytoplankton samples. Although algal density of a single site is highly variable and depends on a number of factors, comparison of algal density at a control site to algal density at a related test site gives a partial comparison of algal biomass at the two sites (Stevenson and Smol 2003).

Taxa richness: Taxa richness is the number of distinct algal taxa present in a sample. Extreme nutrient enrichment tends to reduce the number of different types of algae present in a sample because a few tolerant taxa tend to reproduce rapidly and constitute the majority of the cells present. However, moderate nutrient enrichment of nutrient poor waters may sometimes be correlated with increased algal taxa richness (Stevenson and Bahls 1999) as the algal community begins to respond to the increased input of nutrients.

Community Composition: Shifts in relative proportions of major groups of algae downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Stevenson and Bahls 1999) and may constitute exceedances of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C.

(8) Benthic Macroinvertebrate Assemblages

Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species.

Taxa richness: Taxa richness is the number of distinct macroinvertebrate taxa present in a sample. Stress, habitat destruction and pollution tend to reduce the number of different types of organisms present (Karr and Chu 1998). Decreases in taxa richness related to a facility's effluent may constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C..

Percent Contribution of Dominant Taxon: Percent contribution of the dominant taxon is calculated by dividing the number of individuals in the most abundant taxa by the total number of individuals counted. Percent contribution of the dominant taxon tends to increase with increasing perturbation (Plafkin *et al*., 1989). Increases in the percent contribution of the dominant taxon related to a facility's effluent may constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a), F.A.C. and/or 62-302.530(48)(b), F.A.C..

Community Composition: Shifts in proportions of major groups of organisms downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Fore et. al. 2007, Karr and Chu 1998). Shifts in community composition related to a facility's effluent may constitute exceedances of 62-302.530(47) F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C.

Functional Feeding Groups: Environmental degradation may differentially affect groups of invertebrates based on how the group feeds (e.g. predators, deposit feeders, etc.). In Florida, pollution may be responsible for reducing the numbers of filter feeders and shredders (Fore et. al. 2007). Changes in the proportions of functional feeding groups related to a facility's effluent may constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C. and/or 62-302.530(62), F.A.C..

Shannon-Weaver Diversity Index: This index is specified in the Florida Administrative Code 62-302 as a measure of biological integrity. Low diversity scores are undesirable. Where diversity is low, only a few taxa are abundant as compared to an area where many taxa are present in equitable abundance among taxa (Magurran 1988). A difference of 25% in Shannon-Weaver diversity between results from Hester-Dendy multiplate samplers incubated for 28 days at test and control sites constitute exceedances of 62-302.530(10), F.A.C.

The Stream Condition Index (SCI): The SCI is a biological assessment tool that measures the degree to which flowing fresh waters support a healthy, well-balanced biological community, as indicated by aquatic, benthic macroinvertebrates. Macroinvertebrate taxonomic and abundance data are used to calculate ten biological metric scores, each of which has been shown to respond predictably to human disturbance (Fore et al. 2007; DEP SOP SCI 1000; DEP-SAS-001/11, incorporated into the Quality Assurance Rule by reference 62-160.210(2)(a), F.A.C.). The points for each of the metric scores (0 to 10) are summed to yield a final SCI score (range 0-100). The ten metrics are percent contribution of Tanytarsini, number of sensitive taxa, percent contribution of very tolerant taxa, number of total taxa, number of Ephemeroptera taxa, number of Trichoptera taxa, percent contribution of the dominant taxon, the percent contribution of suspension and filter feeders, number of long-lived taxa, and number of clinger taxa. As human disturbance increases, it is expected that the number of total taxa, the

number of Ephemeroptera taxa, Trichoptera taxa, sensitive taxa, clinger taxa, long-lived taxa, and the percent contribution of Tanytarsini and suspension and filter feeders will decrease while percent contribution of dominant taxon and percent contribution of very tolerant taxa will increase.

The SCI can be used to determine faunal health associated with Chapter 62-302.531, F.A.C. An average SCI score of 40 or higher from at least two temporally independent SCIs, performed at representative locations and times indicates a balanced faunal community. Neither of the two most recent SCI scores should be less than 35. Failure of the SCI indicates that the stream does not meet the Clean Water Act goal of biological integrity, as measured by community structure and function. A failing SCI could be due to water quality problems or other physical disturbance factors such as habitat disruption or hydrologic alterations. While the stressor may not be known, a failed SCI does indicate that fauna is not well-balanced. A failing SCI score, if it is shown to be related to a facility's effluent, may constitute exceedances of 62-302.530(47), F.A.C., 62-302.530(48)(a), F.A.C., 62-302.530(48)(b), F.A.C., or of 62-302.530(62).

(9) Rapid Periphyton Survey

Rapid Periphyton Survey (RPS) is a rapid method to quantify the extent and abundance of attached algae (periphyton) in a stream or river. A total of 99 points are assessed within a 100m area of sampling reach, 9 equidistant points along 11 cross-section transects spaced 10 m apart, If greater than 20% of sampled points have algal lengths greater than 6mm, a sample is collected and the autecological information associated with the dominant algae is evaluated (see DEP SOP FS 7230 Rapid Periphyton Survey). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C..

(10) Linear Vegetation Survey

Linear Vegetation Survey (LVS) is a rapid screening tool for ecological condition, by determining how closely a site's flora resembles that of an undisturbed condition. When the total area of macrophytes equals or exceeds two square meters within the wetted area of the 100 m sampling reach, macrophyte taxonomic names are recorded (DEP SOP FS 7320 Stream and River Linear Vegetation Survey (LVS) Method). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C..

(11) Florida Wetland Condition Index-Vegetation

The Florida Wetland Condition Index-Vegetation (WCI-VI) for isolated, forested wetlands is a biological assessment of wetland health conducted by sampling vascular plants along transects, identifying them to the species level, and calculating metric values based on attributes of the plant community that change predictably along an independent gradient of human disturbance. The index is calculated based on 6 metrics: percent tolerant indicator species, percent sensitive indicator species, percent exotic macrophyte species, average Coefficient of Conservatism (CC) score, percent native perennial species, and percent wetland status species. These metrics are calibrated for 4 ecoregions within the state including the Panhandle, North, Central, and South regions. The score is based on a 0-60 scale, with 60 representing high biological integrity. This current index is based on the Florida Wetland Condition Index (FWCI) developed by Reiss and Brown (2005) to provide a quantitative measure of the biological integrity of a wetland system.

(12) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix D

Chain of Custody

Request Number: RQ-2017-10-09-15

FYI5 Century, Town of - WWTF Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Page 1 of 5

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Collected By: Dana Vestal

Field Report Prepared By: Dana Vestal

Sampling Agency: FDEP Pensacola

Location: Century WWTF	☒ Comp ☐ Grab	Collection (comp begin or grab) Date 10/30/17 Time 1:00A	Eastern Central	Composite end Date 10/30/17 Time 10:00A	Bottle Group(s) (See pg 2): B					
Field ID: EFF-01 composites	Matrix (type, e.g., Salt, Fresh, etc): Wastewater	Diss. Oxygen 9.0 ~~6.56~~	☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 0.8 ~~0.00~~						
STORET #	Temp (C) 2	pH ~~6.24~~ 6.15 DO	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location: Century WWTF	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 10/30/17 Time 10:19	Eastern Central	Composite end Date Time	Bottle Group(s): A					
Field ID: EFF-01 grabs	Matrix (type, e.g., Salt, Fresh, etc): Wastewater	Diss. Oxygen 9.07	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 0.01						
STORET #	Temp (C)	pH 6.15	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location: Century WWTF	☐ Comp ☒ Grab	Collection (comp begin or grab) Date 10/30/17 Time 9:49	Eastern Central	Composite end Date Time	Bottle Group(s): E					
Field ID: Field Blanks	Matrix (type, e.g., Salt, Fresh, etc): DI water	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							
Location: Century WWTF	☐ Comp ☒ Grab	Collection (comp begin or grab) Date NA Time NA	Eastern Central	Composite end Date Time	Bottle Group(s): F					
Field ID: Equipment Blank	Matrix (type, e.g., Salt, Fresh, etc): DI water	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments							

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Dana Vestal	10/30/17 2:24p	FedEx	4	SK	10/31/17 10:05
Dana Vestal					

Request Number: RQ-2017-10-09-15

FY15 Century, Town of - WWTF Sampling Inspection

Florida Department of Environmental Protection

Central Laboratory Submittal Form

last revised Apr 7, 2016

Customer: NW-DIST

Project ID: FY15

Requester: Adrienne E. Pennington

Collected By: Nathan Mulky / Stephen Shuler

Field Report Prepared By: N. Mulky

Sampling Agency: NW/ROC

Location: Escambia River below Century WWTF Discharge	☐ Comp ☑ Grab	Collection (comp begin or grab) Date: 10/30/17 Time: 1110	Eastern Central	Composite end Date	Time	Bottle Group(s) (See pg 2): C					
Field ID: Century Test	Matrix (type, e.g., Salt, Fresh, etc): S	Diss. Oxygen: 8.70 ☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)								
STORET #: 33020226	Temp (C): 15.04	pH: 6.11	Sample Depth: 0.3 ☐ ft ☑ m	Sp. Conductance (umho/cm): 68							
Latitude: 30.96554 ☑ dd ☐ dms	Longitude: 87.23489 ☑ dd ☐ dms	Salinity (ppt):	Comments:								
Location: Escambia River above Century WWTF Discharge	☐ Comp ☑ Grab	Collection (comp begin or grab) Date: 10/30/17 Time: 1130	Eastern Central	Composite end Date	Time	Bottle Group(s): C					
Field ID: Century Control	Matrix (type, e.g., Salt, Fresh, etc): S	Diss. Oxygen: 8.71 ☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)								
STORET #: 33020128	Temp (C): 15.06	pH: 6.81	Sample Depth: 0.3 ☐ ft ☑ m	Sp. Conductance (umho/cm): 69							
Latitude: 30.96795 ☑ dd ☐ dms	Longitude: 87.23329 ☑ dd ☐ dms	Salinity (ppt):	Comments:								
Location:	☐ Comp ☐ Grab	Collection (comp begin or grab) Date: Time:	Eastern Central	Composite end Date	Time	Bottle Group(s):					
Field ID:	Matrix (type, e.g., Salt, Fresh, etc):	Diss. Oxygen: ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)								
STORET #:	Temp (C):	pH:	Sample Depth: ☐ ft ☐ m	Sp. Conductance (umho/cm):							
Latitude: ☐ dd ☐ dms	Longitude: ☐ dd ☐ dms	Salinity (ppt):	Comments:								
Location:	☐ Comp ☐ Grab	Collection (comp begin or grab) Date: Time:	Eastern Central	Composite end Date	Time	Bottle Group(s):					
Field ID:	Matrix (type, e.g., Salt, Fresh, etc):	Diss. Oxygen: ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)								
STORET #:	Temp (C):	pH:	Sample Depth: ☐ ft ☐ m	Sp. Conductance (umho/cm):							
Latitude: ☐ dd ☐ dms	Longitude: ☐ dd ☐ dms	Salinity (ppt):	Comments:								

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
[signature]	10/30/17	Fed Ex	2 2	SR	10-31-17 / 10:05

Request Number: RQ-2017-10-~~2318~~ 09-15

~~Laurel Hill Run WBID 42 100 101 117 35A 76 92~~
FY15 Century
Customer: NW-DIST

Project ID: ~~SMP~~ FY15

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: ~~Michael King~~ Adrienne Pennington
Collected By: Nathan Malka
Field Report Prepared By: N. Malka
Sampling Agency: NWROC

Location: Escambia River below Century WWTF Discharge	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 11/2/17 Time 1030	Eastern Central	Composite end Date	Time			Bottle Group(s) (See pg 2): D
Field ID: Century Test	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: SCI Macro Invert Sampling					
Location: Escambia River above Century WWTF Discharge	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 11/2/17 Time 1100	Eastern Central	Composite end Date	Time			Bottle Group(s): D
Field ID: Century Control	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments: SCI Macro Invert Sampling					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time			Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date	Time			Bottle Group(s)
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)				
STORET #	Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)				
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
	11/2/17	Fed Ex	1		11/3/17 10:10

SAMPLE TRANSMITTAL FORM
Document Reference # 05.1.0

Project: FDEP

Laboratory: Wetlands Research Laboratory

Sampler's intials : NM

Method of transport: Drop off on ice by automobile

Page _1_ of _1_

Samples delivered by: Nimulkey FDEP

Date/Time: 10/30/17 / 1300

Sample received by: [signature] of WRL

Date/Time: 10/30/2017 / 1300

Instructions: Fill in all fields except "Lab ID" on sample transport form completely. Each sample container must use a separate line. Place this form in a waterproof bag and place it with the samples for transport. If a field log or other chain of custody is attached, that information may be referenced on this form and the log or COC attached.

Lab ID	Sample ID	Matrix[1]	Type[2]	Container Type	Analyses Requested	Preservative	Sample (°C)[3]	Sampling Date/Time
17-43194	Century Test Escambia River below WWTF Outfall	SW	G	Sterile plastic	Escherichia Coli/Fecal Coliform	ice/Na2S2O3	2.6	10/30/17 1110
17-43195	Century Control Escambia River above WWTF Outfall	SW	G	Sterile plastic	Escherichia Coli/Fecal Coliform	ice/Na2S2O3	2.6	10/30/17 1130

Comments sample container lot# #17044

RQ-2017-10-09-15

Contact organization FDEP

Contact name Mike King

Phone: (850) 595-8300

Address 160 W Governmental Street, suite 208, Pensacola, FL 32502

Sampler's name: _____

[1]Matrix: SW = surface water, PW = pore water, GW = ground water, S = soil/sediment, X = _____

[2]Type codes: G = grab, C = composite, X = _____

[3] Recorded using IRT-2

Appendix E

Physical/Chemical and Habitat Assessment field sheets

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 78078 ORG ID 21FLPNS LATITUDE 30.96848
COUNTY Escambia STORET # 33020128 LONGITUDE 87.23286
DATE 11/2/17 TIME 1100 SAMPLING AGENCY NWROC
SITE NAME Escambia River above Century WWTF Discharge
FIELD ID/NAME Century Control RECEIVING BODY OF WATER Escambia Bay

RIPARIAN ZONE / STREAM FEATURES RPS ID 8835

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
<	X	<	<	2	X	X	

Landscape Development Intensity Index (LDI):

Local Watershed Erosion (select one): ☐ None ☐ Slight ☐ Moderate ☒ Heavy
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☐ Moderate ☒ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank: 718 Right Bank: 718

Hydrologic Modification Score (per FT 3101): 7

High Water Mark: 2.0 (m) + 5.0 (above present water level) = 7.0 (above bed) (present depth)

Artificially Impounded ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
100 m wide
0.33 m/s | 0.5 m/s | m/s
2.0 m deep | 5.0 m deep | m deep

Artificially Channelized: ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ Recent, severe

Canopy Cover % ☒ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify):

Smothering of Substrates
Sand Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐

SUBSTRATE TYPE
Assessment Tool: ☒ SCI ☒ RPS ☐ LVS ☐ BioRecon ☒ < 2 m² SAV

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	2.7	7	
Undercut Banks / Roots	2.1	7	
Leaf Packs or Mat			
Aquatic Vegetation			
Rock or Shell Rubble			
Sand	95.2	6	
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top								0.6
Mid								☐ VOB
Bottom								TOTAL DEPTH

Meter ID: Meter verify? ☐ Yes ☐ No — 5.0

Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐
Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐
Water Sample Taken? ☒ Yes ☐ No (QC)
Sample Preserved? ☐ Yes ☐ No
Lot Number: Exp:
Color Tannic ☐ Green (Algae) ☐ Clear ☐ Other (Specify) ☒ Brown/Silt/clay
Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number: Exp:
Clarity Clear ☐ Slightly Turbid ☐ Turbid ☐ Opaque ☒

ABUNDANCE	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☒	☐	☐	☐
Aquatic Plants:	☒	☐	☐	☐
Iron/Sulfur Bacteria:	☒	☐	☐	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES:
YSI & H2O Samples 10/30/2017 & 55/NM
RQ-2017-10-09-15

☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM F Butler, N. Milkey, M. King, S. Slade | SIGNATURE: | DATE: 11/02/2017

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
DEP- NWRoc		33020128	11/02/17	Escambia Bay
REMARKS:	COUNTY:	LOCATION: LWWTP		FIELD ID/NAME: 28
Control	ESCAMBIA	ESCAMBIA R above Discharge		33020128

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 6	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 (6)	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 5	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat (5) 4 3 2 1
Water Velocity 20	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec (≥0.33) 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 11 Primary Score 42	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 64 Left Bank (FB)	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 (6)	Only meets 1 of the 3 requirements for optimal bank stability. 5 (4)	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 9 Secondary Score 69	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. (10) (9)	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

111 **TOTAL SCORE** 111/160 = 69% SBIO ID 780178 HA ID 14878

Date:	Analyst:	Signature:
11/02/2017	FBurgess	

62-160.800, F.A.C. Revision Date: March 1, 2014

Form FD 9000-32 **FDEP Linear Stream Vegetation Survey (DEP SOP FS 7320)** Revised 10-11-11

Waterbody: ESCAMBIA R. ABOVE WCP | Date: 11/2/17 | County: ESCAMBIA | Storet Number: 33020128

Analyst: F. BUZIONA | Signature: F Buziona | ~~STO~~ SBIO ID 78078 = 33020128

Comments: Insufficient Veg. ~~NOE~~ LUS NOT CONDUCTED

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Cephalanthus occidentalis											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Fontinalis											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Itea virginica											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Lobelia cardinalis											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with an "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage											
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salix caroliniana											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Scirpus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
Zizaniopsis milacea											

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Escambia R. Above Century WWTP
County: Escambia
Date: 11/02/17
Investigators: Butera

STORET Station Number: 33020128

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	X			60	1	X		
	2	X				2	X		
	3	N	E			3	N	E	
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9		↓			9	↓	↓	
10	1				70	1	X		
	2	X				2	X		
	3	N	E			3	N	E	
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9		↓			9	↓	↓	
20	1	X			80	1	X		
	2	X				2	X		
	3	N	E			3	N	E	
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9		↓			9	↓	↓	
30	1	X			90	1	X		
	2	X				2	X		
	3	N	E			3	N	E	
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9		↓			9	↓	↓	
40	1	X			100	1	X		
	2	X				2	X		
	3	N	E			3	N	E	
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9		↓			9	↓	↓	
50	1	X							
	2	X							
	3	N	E						
	4								
	5			96					
	6								
	7								
	8								
	9	↓	↓						

Secchi depth	0.6
Estimated?	
# points ranked 4-6	9
total points assessed	77
% points ranked 4-6	12

Check accompanying data collected at same site/date	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓ 11/3/17
RQ-2017-10-09-15	

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

SBIO ID 78078
RPS ID 8835

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 78079 ORG ID 21FLPNS LATITUDE
COUNTY Escambia STORET # 330202226 LONGITUDE
DATE 11/2/17 TIME SAMPLING AGENCY NWROC
SITE NAME Escambia River below Central WWTF Discharge
FIELD ID/NAME Central Test RECEIVING BODY OF WATER Escambia Bay

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
X	X	X	X	X	X	X	X

Landscape Development Intensity Index (LDI)

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☐ Moderate ☒ Heavy
Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☐ Moderate ☒ Heavy

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
100 m wide

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank : 718 Right Bank : 718

Hydrologic Modification Score (per FT 3101)

.33 m/s .5 m/s m/s

High Water Mark: 2.0 (m) + 5.0 (above present water level) = 7.0 (present depth) (above bed)

Artificially Impounded ☐ Yes ☒ No

m deep m deep m deep

Artificially Channelized : ☐ No ☐ Mostly recovered, more sinuous ☐ Some recovery ☐ Recent, severe

Canopy Cover % ☒ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils ☐ Absent ☐ Slight ☒ Moderate ☐ Profuse

Sediment Odors ☐ Normal ☒ Sewage (Trace) ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) :

Smothering of Substrates
Sand Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐

SUBSTRATE TYPE
Assessment Tool: ☒ SCI ☒ RPS ☐ LVS ☐ BioRecon ☒ ≤ 2 m² SAV

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)...	1.5	5	
Undercut Banks / Roots	0.8	5	
Leaf Packs or Mat		2	
Aquatic Vegetation			
Rock or Shell Rubble..	0.2	5	
Sand.....	97.3	17	
Mud / Muck / Silt			
Other Gravel	0.2	2	
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :								.6
Mid:								☐ VOB
Bottom								TOTAL DEPTH

Meter ID: **Meter verify?** ☐ Yes ☐ No

Water Odors Normal ☐ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☐ Sheen ☐ Globs ☐ Slick ☒ Other ☐

Water Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number:_____ Exp:_____

Color Tannic ☐ Green (Algae) ☐ Clear ☐ Other (Specify) ☒ Brown/Clay

Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number:_____ Exp:_____

Clarity Clear ☐ Slightly Turbid ☐ Turbid ☐ Opaque ☒

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☒	☐	☐
Aquatic Plants:	☒	☐	☐	☐
Iron/Sulfur Bacteria:	☐	☒	☐	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES:
H2O SAmples collected 10/30/17

☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM F Butera, N. Mulkey, M. King, S. Slade

SIGNATURE

DATE: 11/2/2017

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
DEP-NWROC		33020226	11/02/17	ESCAMBIA BAY
REMARKS: Test Site	COUNTY: ESCAMBIA	LOCATION: ESCAMBIA R. @ Carling above Below WWTP		FIELD ID/NAME: 33020226

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 11	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 (11)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 2	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 (2) 1
Water Velocity 24	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 13 Primary Score 46	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 (13) 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 24	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 6 Left Bank 5	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 (6)	Only meets 1 of the 3 requirements for optimal bank stability. (5) 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 8 Left Bank 8 Secondary Score 67	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

113 **TOTAL SCORE** SBIO ID 78079 HA ID 14880

Date:	Analyst:	Signature:
11/02/2017	F. BUTERA	

62-160.800, F.A.C.

Revision Date: March 1, 2014

Century WWTP Test site

Form FD 9000-32 **FDEP Linear Stream Vegetation Survey (DEP SOP FS 7320)** Revised 10-11-11

Waterbody: Escambia R. Below WWTP | Date: 11/2/17 | County: Escambia | Storet Number: 3302022

Analyst: FBUTEAU | Signature:

Comments: ~~Cont~~ Insufficient Veg. NO LUS Conducted

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

SIBIO ID 78079

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Cephalanthus occidentalis											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Fontinalis											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Itea virginica											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Lobelia cardinalis											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with an "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage											
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salix caroliniana											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Scirpus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
Zizaniopsis milacea											

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: ESCAMBIA R. below WWTP | County: ESCAMBIA | Date: 10/2/17 | Investigators: F BUTERA

STORET Station Number: 33020226

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	X		
	2	X		
	3	N		
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
10	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
20	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
30	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
40	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
50	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
60	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
70	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
80	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
90	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	
100	1	X		
	2	X		
	3	N	✓	
	4	↓	✓	
	5		✓	96
	6		✓	
	7		✓	
	8		✓	
	9		✓	

Secchi depth	1.6
Estimated?	N
# points ranked 4-6	0
total points assessed	78
% points ranked 4-6	0

Check accompanying data collected at same site/date	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	X
RQ-	

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Water Quality collect 10/30/2017
SBIO: 78079
RPS ID 8836

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

62-160.800, F.A.C. Revision Date: March 1, 2014

Appendix F

Chemical analysis of effluent and receiving water

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
10/30/2017 11:00	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.9 I	mg/L	0.2	2
10/30/2017 11:00	Effluent	Nutrients	Kjeldahl Nitrogen	0.89	mg N/L	0.16	0.4
10/30/2017 11:00	Effluent	Nutrients	NO2NO3-N	13	mg N/L	0.2	0.5
10/30/2017 11:00	Effluent	Nutrients	TSS	4 I	mg/L	2	10
10/30/2017 11:00	Effluent	Nutrients	Ammonia-N	0.036	mg N/L	0.002	0.005
10/30/2017 11:00	Effluent	Nutrients	Organic Carbon	3.2	mg C/L	0.5	1
10/30/2017 11:00	Effluent	Nutrients	Total-P	2.7	mg P/L	0.025	0.25
10/30/2017 11:00	Effluent	Nutrients	Temperature	2	C		
10/30/2017 11:00	Effluent	Nutrients	pH	6.26			
10/30/2017 11:00	Effluent	Nutrients	Total Residual Chlorine	0.01	mg/L		
10/30/2017 11:00	Effluent	Nutrients	Dissolved Oxygen	6.56	mg/L		
10/30/2017 11:19	Effluent	AGP/LN	Algal Growth Potential	321	mg DryWt/L	0.3	0.9
10/30/2017 11:19	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	ug/L	0.4	1.2
10/30/2017 11:19	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	ug/L	0.55	1.7
10/30/2017 11:19	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
10/30/2017 11:44	Effluent	Overflow	Fecal Coliforms-Membrane Filter	8 B	cfu/100 mL	2	2
10/30/2017 11:44	Effluent	Overflow	Escherichia Coli-Quanti-Tray	10 U	MPN/100 mL	10	10
10/30/2017 11:19	Effluent	Metals	Aluminum	36	ug/L	3	12
10/30/2017 11:19	Effluent	Metals	Nickel	2.14	ug/L	0.2	0.8
10/30/2017 11:19	Effluent	Metals	Calcium	17.2	mg/L	0.075	0.3
10/30/2017 11:19	Effluent	Metals	Chromium	0.40 U	ug/L	0.4	1.6
10/30/2017 11:19	Effluent	Metals	Selenium	0.20 U	ug/L	0.2	0.8
10/30/2017 11:19	Effluent	Metals	Iron	60 I	ug/L	30	120
10/30/2017 11:19	Effluent	Metals	Potassium	7	mg/L	0.3	1.2
10/30/2017 11:19	Effluent	Metals	Sodium	25.9	mg/L	0.5	2
10/30/2017 11:19	Effluent	Metals	Arsenic	0.24	ug/L	0.05	0.2
10/30/2017 11:19	Effluent	Metals	Magnesium	1.59	mg/L	0.04	0.16
10/30/2017 11:19	Effluent	Metals	Zinc	50	ug/L	5	20
10/30/2017 11:19	Effluent	Metals	Cadmium	0.043 I	ug/L	0.02	0.08
10/30/2017 11:19	Effluent	Metals	Copper	25.3	ug/L	0.2	0.8
10/30/2017 11:19	Effluent	Metals	Silver	0.010 U	ug/L	0.01	0.04
10/30/2017 11:19	Effluent	Metals	Lead	0.16 I	ug/L	0.05	0.2
10/30/2017 11:19	Effluent	Nutrients	NO2NO3-N	13	mg N/L	0.2	0.5
10/30/2017 11:19	Effluent	Nutrients	Total-P	2.7	mg P/L	0.025	0.25
10/30/2017 11:19	Effluent	Nutrients	Chloride	35	mg Cl/L	0.2	0.5
10/30/2017 11:19	Effluent	Nutrients	Total Alkalinity	4.9	mg CaCO3/L	0.65	2.5
10/30/2017 11:19	Effluent	Nutrients	Organic Carbon	2.8	mg C/L	0.5	1
10/30/2017 11:19	Effluent	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
10/30/2017 11:19	Effluent	Nutrients	Sulfate	11	mg SO4/L	0.2	0.5
10/30/2017 11:19	Effluent	Nutrients	Kjeldahl Nitrogen	0.88	mg N/L	0.16	0.4
10/30/2017 11:19	Effluent	Nutrients	O-Phosphate-P	2.5	mg P/L	0.08	0.2
10/30/2017 11:19	Effluent	Nutrients	Turbidity	1.2	NTU	0.1	0.13
10/30/2017 11:19	Effluent	Nutrients	Color (true)	7.1	PCU	2.5	6
10/30/2017 11:19	Effluent	Nutrients	Ammonia-N	0.023	mg N/L	0.002	0.005
10/30/2017 11:19	Effluent	Pesticides	Ametryn	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Ethoprop	0.0052 U	ug/L	0.0052	0.021
10/30/2017 11:19	Effluent	Pesticides	Norflurazon	0.031 U	ug/L	0.031	0.12
10/30/2017 11:19	Effluent	Pesticides	Prometryn	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Alachlor	0.062 U	ug/L	0.062	0.25
10/30/2017 11:19	Effluent	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Fonofos	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Carbamazepine	0.22	ug/L	0.004	0.016
10/30/2017 11:19	Effluent	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Bromacil	0.042 U	ug/L	0.042	0.17
10/30/2017 11:19	Effluent	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Metolachlor	0.062 UJ	ug/L	0.062	0.25
10/30/2017 11:19	Effluent	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Ethion	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Atrazine Desisopropyl	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Demeton	0.025 U	ug/L	0.025	0.1
10/30/2017 11:19	Effluent	Pesticides	Disulfoton	0.0052 U	ug/L	0.0052	0.021
10/30/2017 11:19	Effluent	Pesticides	Parathion Ethyl	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Prometon	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Azinphos Methyl	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Hexazinone	0.031 U	ug/L	0.031	0.12
10/30/2017 11:19	Effluent	Pesticides	Metalaxyl	0.042 U	ug/L	0.042	0.17
10/30/2017 11:19	Effluent	Pesticides	Metribuzin	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Phorate	0.0052 U	ug/L	0.0052	0.021
10/30/2017 11:19	Effluent	Pesticides	Simazine	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Fenamiphos	0.031 UJ	ug/L	0.031	0.12
10/30/2017 11:19	Effluent	Pesticides	Malathion	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Naled	0.042 U	ug/L	0.042	0.17
10/30/2017 11:19	Effluent	Pesticides	Sucralose	20	ug/L	0.01	0.04
10/30/2017 11:19	Effluent	Pesticides	Butylate	0.021 U	ug/L	0.021	0.083
10/30/2017 11:19	Effluent	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.042
10/30/2017 11:19	Effluent	Pesticides	Acetaminophen	0.0080 U	ug/L	0.008	0.032
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	16 U	ug/L	16	62

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	ug/L	42	170
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Hexachloroethane	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	1,4-Dioxane	0.14	ug/L	0.02	0.08
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.3
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.3
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	42
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.3
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.3
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	ug/L	3.1	12
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4.2
Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL

10/30/2017 11:19	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.3
10/30/2017 11:19	Effluent	Priority Organic Pollutants	4-Nitrophenol	16 U	ug/L	16	62
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	420
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.83
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4.2
10/30/2017 11:19	Effluent	Nutrients	pH	6.15			
10/30/2017 11:19	Effluent	Nutrients	Total Residual Chlorine	0.01	mg/L		
10/30/2017 11:44	Effluent	Nutrients	Total Residual Chlorine	0.01	mg/L		
10/30/2017 11:19	Effluent	Nutrients	Dissolved Oxygen	9.07	mg/L		
10/30/2017 12:10	Test Site	AGP/LN	Algal Growth Potential	8.84 A	mg DryWt/L	0.3	0.9
10/30/2017 12:10	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
10/30/2017 12:10	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.0 I	ug/L	0.55	1.7
10/30/2017 12:10	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	1.3	ug/L	0.4	1.2
10/30/2017 12:10	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.75 I	mg/L	0.2	2
10/30/2017 12:10	Test Site	Overflow	Escherichia Coli-Quanti-Tray	199	MPN/100 mL	10	10
10/30/2017 12:10	Test Site	Overflow	Fecal Coliforms-Membrane Filter	151 B	cfu/100 mL	2	2
10/30/2017 12:10	Test Site	Metals	Chromium	2.2	ug/L	0.4	1.6
10/30/2017 12:10	Test Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
10/30/2017 12:10	Test Site	Metals	Calcium	7.25	mg/L	0.075	0.3
10/30/2017 12:10	Test Site	Metals	Arsenic	0.97	ug/L	0.05	0.2
10/30/2017 12:10	Test Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
10/30/2017 12:10	Test Site	Metals	Nickel	1.18	ug/L	0.2	0.8
10/30/2017 12:10	Test Site	Metals	Sodium	4.1	mg/L	0.5	2
10/30/2017 12:10	Test Site	Metals	Copper	0.74 I	ug/L	0.2	0.8
10/30/2017 12:10	Test Site	Metals	Potassium	1.1 I	mg/L	0.3	1.2
10/30/2017 12:10	Test Site	Metals	Aluminum	986	ug/L	3	12
10/30/2017 12:10	Test Site	Metals	Lead	0.79	ug/L	0.05	0.2
10/30/2017 12:10	Test Site	Metals	Zinc	5.0 U	ug/L	5	20
10/30/2017 12:10	Test Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
10/30/2017 12:10	Test Site	Metals	Magnesium	1.03	mg/L	0.04	0.16
10/30/2017 12:10	Test Site	Metals	Iron	2.12E+03	ug/L	30	120
10/30/2017 12:10	Test Site	Nutrients	NO2NO3-N	0.15	mg N/L	0.004	0.01
10/30/2017 12:10	Test Site	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
10/30/2017 12:10	Test Site	Nutrients	O-Phosphate-P	0.012	mg P/L	0.004	0.01
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 12:10	Test Site	Nutrients	Chloride	3.8 A	mg Cl/L	0.2	0.5

10/30/2017 12:10	Test Site	Nutrients	TSS	20	mg/L	2	10
10/30/2017 12:10	Test Site	Nutrients	Color (true)	37	PCU	2.5	6
10/30/2017 12:10	Test Site	Nutrients	Ammonia-N	0.031	mg N/L	0.002	0.005
10/30/2017 12:10	Test Site	Nutrients	Total Alkalinity	21	mg CaCO3/L	0.65	2.5
10/30/2017 12:10	Test Site	Nutrients	Organic Carbon	6.4	mg C/L	0.5	1
10/30/2017 12:10	Test Site	Nutrients	Total-P	0.042	mg P/L	0.002	0.005
10/30/2017 12:10	Test Site	Nutrients	Turbidity	23	NTU	0.1	0.13
10/30/2017 12:10	Test Site	Nutrients	Kjeldahl Nitrogen	0.4	mg N/L	0.08	0.2
10/30/2017 12:10	Test Site	Nutrients	Sulfate	5.1 A	mg SO4/L	0.2	0.5
10/30/2017 12:10	Test Site	Pesticides	Sucralose	0.033 I	ug/L	0.01	0.04
10/30/2017 12:10	Test Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	41
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	410
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Hexachloroethane	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.2
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	62
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.2
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.2
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.82
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41 U	ug/L	41	160

10/30/2017 12:10	Test Site	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.2
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.2
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	62
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:10	Test Site	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	ug/L	3.1	12
10/30/2017 12:10	Test Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
10/30/2017 12:10	Test Site	Nutrients	Temperature	15.04	C		
10/30/2017 12:10	Test Site	Nutrients	pH	6.11			
10/30/2017 12:10	Test Site	Nutrients	Specific Conductance	68	umhos/cm		
10/30/2017 12:10	Test Site	Nutrients	Dissolved Oxygen	8.7	mg/L		
10/30/2017 12:10	Test Site	Nutrients	Sample Depth	0.3	m		
	Test Site	Benthos	Stream Condition Index 2012	52			
10/30/2017 12:30	Control Site	AGP/LN	Algal Growth Potential	7.03	mg DryWt/L	0.3	0.9
10/30/2017 12:30	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	1.1 I	ug/L	1.1	3.4
10/30/2017 12:30	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	1.2 I	ug/L	0.8	2.4
10/30/2017 12:30	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.76 I	mg/L	0.2	2
10/30/2017 12:30	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.80 U	ug/L	0.8	2.4
10/30/2017 12:30	Control Site	Overflow	Escherichia Coli-Quanti-Tray	171	MPN/100 mL	10	10
10/30/2017 12:30	Control Site	Overflow	Fecal Coliforms-Membrane Filter	138 B	cfu/100 mL	2	2
10/30/2017 12:30	Control Site	Metals	Iron	2.15E+03	ug/L	30	120
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 12:30	Control Site	Metals	Chromium	2.1	ug/L	0.4	1.6
10/30/2017 12:30	Control Site	Metals	Calcium	7.69	mg/L	0.075	0.3

10/30/2017 12:30	Control Site	Metals	Arsenic	0.99	ug/L	0.05	0.2
10/30/2017 12:30	Control Site	Metals	Silver	0.010 U	ug/L	0.01	0.04
10/30/2017 12:30	Control Site	Metals	Aluminum	927	ug/L	3	12
10/30/2017 12:30	Control Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
10/30/2017 12:30	Control Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
10/30/2017 12:30	Control Site	Metals	Nickel	1.15	ug/L	0.2	0.8
10/30/2017 12:30	Control Site	Metals	Copper	0.73 I	ug/L	0.2	0.8
10/30/2017 12:30	Control Site	Metals	Sodium	4.3	mg/L	0.5	2
10/30/2017 12:30	Control Site	Metals	Zinc	5.0 U	ug/L	5	20
10/30/2017 12:30	Control Site	Metals	Magnesium	1.07	mg/L	0.04	0.16
10/30/2017 12:30	Control Site	Metals	Potassium	1.2 I	mg/L	0.3	1.2
10/30/2017 12:30	Control Site	Metals	Lead	0.78	ug/L	0.05	0.2
10/30/2017 12:30	Control Site	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
10/30/2017 12:30	Control Site	Nutrients	Total-P	0.043	mg P/L	0.002	0.005
10/30/2017 12:30	Control Site	Nutrients	Total Alkalinity	21	mg CaCO3/L	0.65	2.5
10/30/2017 12:30	Control Site	Nutrients	Ammonia-N	0.031	mg N/L	0.002	0.005
10/30/2017 12:30	Control Site	Nutrients	NO2NO3-N	0.15	mg N/L	0.004	0.01
10/30/2017 12:30	Control Site	Nutrients	Chloride	3.8	mg Cl/L	0.2	0.5
10/30/2017 12:30	Control Site	Nutrients	O-Phosphate-P	0.013	mg P/L	0.004	0.01
10/30/2017 12:30	Control Site	Nutrients	Color (true)	39	PCU	2.5	6
10/30/2017 12:30	Control Site	Nutrients	Kjeldahl Nitrogen	0.39	mg N/L	0.08	0.2
10/30/2017 12:30	Control Site	Nutrients	Sulfate	5.1	mg SO4/L	0.2	0.5
10/30/2017 12:30	Control Site	Nutrients	Turbidity	24	NTU	0.1	0.13
10/30/2017 12:30	Control Site	Nutrients	Organic Carbon	6.3	mg C/L	0.5	1
10/30/2017 12:30	Control Site	Nutrients	TSS	21 A	mg/L	2	10
10/30/2017 12:30	Control Site	Pesticides	Sucralose	0.041	ug/L	0.01	0.04
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	410
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.2
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	62
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	41
10/30/2017 12:30	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.2
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.82
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.1

10/30/2017 12:30	Control Site	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.2
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	41 U	ug/L	41	160
10/30/2017 12:30	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	62
10/30/2017 12:30	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.2
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Hexachloroethane	3.1 U	ug/L	3.1	12
10/30/2017 12:30	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.2
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.82
10/30/2017 12:30	Control Site	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4.1
10/30/2017 12:30	Control Site	Nutrients	Temperature	15.06	C		
10/30/2017 12:30	Control Site	Nutrients	Sample Depth	0.3	m		
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 12:30	Control Site	Nutrients	Specific Conductance	69	umhos/cm		
10/30/2017 12:30	Control Site	Nutrients	Dissolved Oxygen	8.71	mg/L		

10/30/2017 12:30	Control Site	Nutrients	pH	6.81			
	Control Site	Benthos	Stream Condition Index 2012	48			
10/30/2017 11:44	Field Blank	Overflow	Escherichia Coli-Quanti-Tray	1 U	MPN/100 mL	1	1
10/30/2017 11:44	Field Blank	Overflow	Fecal Coliforms-Membrane Filter	1 U	cfu/100 mL	1	1
10/30/2017 10:49	Field Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
10/30/2017 10:49	Field Blank	Metals	Iron	30 U	ug/L	30	120
10/30/2017 10:49	Field Blank	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
10/30/2017 10:49	Field Blank	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
10/30/2017 10:49	Field Blank	Metals	Lead	0.19 I	ug/L	0.05	0.2
10/30/2017 10:49	Field Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
10/30/2017 10:49	Field Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
10/30/2017 10:49	Field Blank	Metals	Copper	0.60 I	ug/L	0.2	0.8
10/30/2017 10:49	Field Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
10/30/2017 10:49	Field Blank	Metals	Chromium	0.40 U	ug/L	0.4	1.6
10/30/2017 10:49	Field Blank	Metals	Nickel	0.20 U	ug/L	0.2	0.8
10/30/2017 10:49	Field Blank	Metals	Zinc	5.0 U	ug/L	5	20
10/30/2017 10:49	Field Blank	Metals	Silver	0.010 U	ug/L	0.01	0.04
10/30/2017 10:49	Field Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
10/30/2017 10:49	Field Blank	Metals	Aluminum	3.0 U	ug/L	3	12
10/30/2017 10:49	Field Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
10/30/2017 10:49	Field Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
10/30/2017 10:49	Field Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.13
10/30/2017 10:49	Field Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
10/30/2017 10:49	Field Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
10/30/2017 10:49	Field Blank	Nutrients	Organic Carbon	1.0 I	mg C/L	0.5	1
10/30/2017 10:49	Field Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
10/30/2017 10:49	Field Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
10/30/2017 10:49	Field Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
10/30/2017 10:49	Field Blank	Nutrients	O-Phosphate-P	0.004 I	mg P/L	0.004	0.01
10/30/2017 10:49	Field Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
10/30/2017 10:49	Field Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
10/30/2017 10:49	Field Blank	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.078
10/30/2017 10:49	Field Blank	Pesticides	Chlorpyrifos Methyl	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Ethion	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Mevinphos	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Atrazine Desisopropyl	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Carbamazepine	4.0E-04 U	ug/L	4.00E-04	0.0016
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 10:49	Field Blank	Pesticides	Phorate	0.0049 U	ug/L	0.0049	0.02
10/30/2017 10:49	Field Blank	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.078

10/30/2017 10:49	Field Blank	Pesticides	Metolachlor	0.059 UJ	ug/L	0.059	0.23
10/30/2017 10:49	Field Blank	Pesticides	Metalaxyl	0.039 U	ug/L	0.039	0.16
10/30/2017 10:49	Field Blank	Pesticides	Demeton	0.023 U	ug/L	0.023	0.094
10/30/2017 10:49	Field Blank	Pesticides	Parathion Methyl	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Fonofos	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.078
10/30/2017 10:49	Field Blank	Pesticides	Norflurazon	0.029 U	ug/L	0.029	0.12
10/30/2017 10:49	Field Blank	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.078
10/30/2017 10:49	Field Blank	Pesticides	Ametryn	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Alachlor	0.059 U	ug/L	0.059	0.23
10/30/2017 10:49	Field Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
10/30/2017 10:49	Field Blank	Pesticides	Naled	0.039 U	ug/L	0.039	1.60E-01
10/30/2017 10:49	Field Blank	Pesticides	Malathion	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Bromacil	0.039 U	ug/L	3.90E-02	1.60E-01
10/30/2017 10:49	Field Blank	Pesticides	Prometon	0.020 U	ug/L	0.02	0.078
10/30/2017 10:49	Field Blank	Pesticides	Fenamiphos	0.029 UJ	ug/L	0.029	0.12
10/30/2017 10:49	Field Blank	Pesticides	Ethoprop	0.0049 U	ug/L	0.0049	0.02
10/30/2017 10:49	Field Blank	Pesticides	Disulfoton	0.0049 U	ug/L	0.0049	0.02
10/30/2017 10:49	Field Blank	Pesticides	Chlorpyrifos Ethyl	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Butylate	0.020 U	ug/L	0.02	7.80E-02
10/30/2017 10:49	Field Blank	Pesticides	Atrazine	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Acetaminophen	0.0080 U	ug/L	0.008	0.032
10/30/2017 10:49	Field Blank	Pesticides	Simazine	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Diazinon	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Atrazine Desethyl	0.0098 U	ug/L	0.0098	0.039
10/30/2017 10:49	Field Blank	Pesticides	Hexazinone	0.029 U	ug/L	0.029	0.12
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9 U	ug/L	2.9	12
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Butyl benzyl phthalate	0.98 U	ug/L	0.98	3.90E+00
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.98 U	ug/L	0.98	3.9
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	59

10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	7.8
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Di-n-butyl phthalate	0.98 U	ug/L	0.98	3.90E+00
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	7.80E-01
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Hexachloroethane	2.9 U	ug/L	2.9	12
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9 U	ug/L	2.9	1.20E+01
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	7.80E+00
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzidine	98 U	ug/L	9.80 E+01	3.90E+02
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Diethyl phthalate	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.9 U	ug/L	2.9	12
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Pentachlorophenol	0.98 U	ug/L	0.98	3.90E+00
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	7.8
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9 U	ug/L	2.9	12
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	7.8
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	1,4-Dioxane	0.020 UY	ug/L	0.02	0.08
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2-Nitrophenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39 U	ug/L	39	160
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	7.80E-01
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Dimethyl phthalate	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2-Chlorophenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Isophorone	0.98 U	ug/L	0.98	3.9
Date_Sampled	**UDL**	**SCH_Group**	**Component**	**Result**	**Units**	**MDL**	**PQL**
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	7.8
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.78

10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Phenol	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.8 U	ug/L	9.8	39
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	59
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.78
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Hexachlorobenzene	0.98 U	ug/L	0.98	3.9
10/30/2017 10:49	Field Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9 U	ug/L	2.9	12

EPA End Sheet

The Priority Pollutants Analysis of the Town of Century WWTF effluent sampled on October 30, 2017 NPDES #FL0032468

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 3 2 4 6 8 1 1	12 1 7 1 0 3 0	18 **X**	19 **S**	20 1

Remarks

Biological Analyses of the Town of Century WWTF effluent sampled on October 30, 2017, NPDES #FL0032468

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 0 3 2 4 6 8 1 1	12 1 7 1 0 3 0	18 **S**	19 **S**	20 1

Remarks